

## WHAT IS CLAIMED IS:

1           1.       A method for facilitating communication over a fibre channel (FC) system via  
2 a low bandwidth interface connected to a user device, comprising the steps of:  
3           receiving first information from the FC system, wherein the first information is  
4 associated with a storage device disposed in the FC system;  
5           processing the first information to identify information intended for the user device;  
6           storing the identified information in a buffer as first stored information; and  
7           communicating the first stored information via the low bandwidth interface to the user  
8 device.

1           2.       The method of claim 1 further comprising the steps of:  
2           receiving second information via the low bandwidth interface from the user device for  
3 transmission over the FC system, wherein the second information is associated with a storage  
4 device disposed in the FC system;  
5           storing the second information in a buffer as second stored information; and  
6           communicating second stored information via the FC system after an amount of  
7 second stored information exceeds a predetermined value.

1           3.       The method of claim 2 further comprising the step of:  
2           utilizing flow control procedures associated with the FC system to prevent a first  
3 buffer from being overwritten.

1           4.       The method of claim 3 wherein the low bandwidth interface is an RS-232  
2 interface.

1           5.     The method of claim 2 wherein the user device is a diagnostic PC utilized to  
2     diagnosis disk array operations, and wherein the method further comprises the step of:  
3           emulating a disk array.

1           6.     The method of claim 4 wherein the RS-232 interface is connected to a modem.

1           7.     The method of claim 6 wherein remote data access services are facilitated by  
2     the modem.

1           8.     The method of claim 7 wherein the remote data services are associated with an  
2     Internet Service Provider.

1           9.     A system for facilitating communication over a fibre channel (FC) system via  
2     a low bandwidth interface connected to a user device, comprising:  
3           a buffer;  
4           an interface to the FC system;  
5           a low bandwidth interface; and  
6           a microprocessor, wherein the microprocessor is disposed to arbitrate access to the FC  
7     system to communicate information received from the low bandwidth interface when an  
8     amount of received information exceeds a predetermined value, wherein the microprocessor  
9     causes information received from the FC system to be buffered before communication via the  
10    low bandwidth interface, and wherein communicated information is associated with a storage  
11    device disposed in the FC system.

1           10.    The system of claim 9 wherein the low bandwidth interface is an RS-232  
2     interface.

1           11.     The system of claim 10 wherein the user device is a personal computer and an  
2     array controller is disposed in the FC system.

1           12.     The system of claim 11 wherein the array controller is a network controller.

1           13.     The system of claim 12 wherein the array controller implements network drive  
2     access protocols.

1           14.     The system of claim 9 wherein the microprocessor operates under an  
2     instruction set designed to emulate a disk array system.

1           15.     The system of claim 9 wherein the microprocessor utilizes flow control  
2     procedures associated with the FC system to prevent the buffer from being overwritten.

1           16.     The system of claim 10 wherein the FC system comprises a storage device,  
2     and wherein the user device is associated with a modem to facilitate remote mirroring of data  
associated with the storage device.

1           17.     A system for facilitating communication between Fibre Channel arbitrated  
2     loop topologies via a low bandwidth interface connected to a user device, comprising:

3           a buffer;

4           a first interface to a first Fibre Channel arbitrated loop topology;

5           a second interface to a second Fibre Channel arbitrated loop topology;

6           a low bandwidth interface; and

7           a microprocessor, wherein the microprocessor facilitates communication between the  
8     first and second Fibre Channel arbitrated loop topologies, wherein the microprocessor is  
9     disposed to arbitrate access to at least one of the first and second Fibre Channel arbitrated

10 loop topologies to communicate information received from the low bandwidth interface, and  
11 wherein the microprocessor causes information received from at least one of the first and  
12 second Fibre Channel arbitrated loop topologies to be buffered before communication via the  
13 low bandwidth interface.

1 18. The system of claim 17 wherein the microprocessor operates under the control  
2 of an instruction set to provide authorization protocols.

1 19. The system of claim 17 wherein the microprocessor restricts communication  
2 with a restricted device resident on said first arbitrated loop topology.

1 20. The system of claim 20 wherein the restricted device is a storage unit.